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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/873,988	06/01/2001	Baolin Yang	21891.03501	4842

7590 09/15/2004

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EXAMINER	
THANGAVELU, KANDASAMY	

ART UNIT	PAPER NUMBER
2123	

DATE MAILED: 09/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/873,988	YANG ET AL.
	Examiner	Art Unit
	Kandasamy Thangavelu	2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 June 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18,21-32,35 and 36* is/are rejected.

7)☒ Claim(s) *19,20,33 and 34* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 June 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-36 of the application have been examined.

Drawings

2. The drawings are objected to; see a copy of Form PTO-948 for an explanation.

Specification

3. The disclosure is objected to because of the following informalities:

Page 6, Lines 7-9, "what is needed is a method for perform efficient, highly accurate radio frequency circuit simulation", appears to be incorrect and it appears that it should be, "what is needed is a method for performing efficient, highly accurate radio frequency circuit simulation".

Page 11, Lines 12-13, "The order of polynomial approximation p is usually fixed at a tow value", appears to be incorrect and it appears that it should be, "The order of polynomial approximation p is usually fixed at a low value".

Appropriate corrections are required.

Claim Objections

4. The following is a quotation of 37 C.F.R § 1.75 (d)(1):

The claim or claims must conform to the invention as set forth in the remainder of the specification and terms and phrases in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description.

5. Claim 33 is objected to because of the following informalities:

In Claim 33, "wherein the step of determining the order of accuracy desired in each interval further causes the processor to carry out the step of determining whether to increase order of the particular interval", appears to be incorrect and it appears that it should be, "wherein the step of determining the order of accuracy desired in each interval further causes the processor to carry out the step of determining whether to increase order of accuracy of the particular interval".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-
(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

7. Claims 9-11, 13, 15-18, 21, 23-25, 27, 29-32 and 35 are rejected under 35 U.S.C. § 102(e) as being anticipated by **Roychowdhury** (U.S. Patent 5,5,995,733).

7.1 **Roychowdhury** teaches Method and apparatus for efficient design and analysis of integrated circuits using multiple time scales. Specifically, as per claim 9, **Roychowdhury** teaches a method of solving a set of differential-algebraic equations arising in a circuit simulation (CL3, L3-4; CL3, L30-31; CL14, L29-30; CL14, L64; CL15, L39-41; CL3, L36-38; CL6, L53-56; CL7, L1-2; CL8, L42-43); the method comprising:

applying a collocation method to each differential-algebraic equation to discretize the set of differential-algebraic equations (CL9, L39-40; CL10, L6-7; CL9, L15-16); and

forming a solution to the set of differential-algebraic equations based on the discretized differential-algebraic equation (CL9, L39 to CL10, L30).

Per claim 10: **Roychowdhury** teaches the set of differential-algebraic equations comprises at least one of a set of initial-value differential-algebraic equations (CL1, L43-50) and a set of boundary-value differential-algebraic equations (CL6, L59-61; CL9, L20-28).

Per claim 11: **Roychowdhury** teaches that the circuit simulation is a radio frequency (RF) circuit simulation (CL2, L22-25; CL2, L66 to CL3, L4; CL3, L3-4; CL3, L30-31; CL14, L29-30; CL14, L64; CL15, L39-41).

Per claim 13: **Roychowdhury** teaches the set of differential-algebraic equations comprises a set of boundary-value differential-algebraic equations (CL6, L59-61; CL9, L20-28),

and wherein the boundary-value differential-algebraic equations are discretized in intervals, and wherein neighboring intervals share a boundary (CL9, L20-30).

Per claim 15: **Roychowdhury** teaches that the set of differential-algebraic equations comprises a set of boundary-value differential-algebraic equations (CL6, L59-61; CL9, L20-28), and wherein the boundary-value differential-algebraic equations include a first and a last interval (CL1, L43-50).

Per claim 16: **Roychowdhury** teaches the method further comprising enforcing a boundary condition at a boundary of the first and the last interval (CL1, L43-50).

Per claim 17: **Roychowdhury** teaches solving the set of differential-algebraic equations using a Newton-Raphson iterative method CL2, L4-8; CL9, L18-19; CL10, L29-30); and

in each Newton-Raphson step of the Newton-Raphson iterative method, solving a linear Jacobian system using a linear iterative method (CL10, L29-38; CL11, L44 to CL12, L6; CL4, L61-65; CL11, L7-9).

Per claim 18: **Roychowdhury** teaches the method further comprising determining an order of accuracy desired in each interval (CL6, L44-46; CL15, L56-57).

Per claim 21: **Roychowdhury** teaches the method further comprising separately approximating for each interval a local preconditioner l (CL2, L35-36).

7.2 As per Claims 23-25, 27, 29-32 and 35, these are rejected based on the same reasoning as Claims 9-11, 13, 15-18 and 21 supra. Claims 23-25, 27, 29-32 and 35are computer readable medium claims reciting the same limitations as Claims 9-11, 13, 15-18 and 21, as taught throughout by **Roychowdhury. Roychowdhury** teaches a computer-readable medium carrying one or more sequences of one or more instructions (CL13, L44-64).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

9. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. Claims 1, 7, 14 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Roychowdhury** (U.S. Patent 5,5,995,733) in view of **Fabien** ("Indirect numerical solution of constrained optimal control problems with parameters", IEEE 1995).

10.1 **Roychowdhury** teaches Method and apparatus for efficient design and analysis of integrated circuits using multiple time scales. Specifically, as per claim 1, **Roychowdhury** teaches a method of simulating a circuit (CL3, L3-4; CL3, L30-31; CL14, L29-30; CL14, L64; CL15, L39-41); the method comprising:

defining a differential-algebraic equation of the circuit (CL3, L36-38; CL6, L53-56; CL7, L1-2; CL8, L42-43); and

applying a collocation method to discretize the differential-algebraic equation (CL9, L39-40; CL10, L6-7; CL9, L15-16).

Roychowdhury teaches simulating multitone problem by representing signals in mildly nonlinear paths to obtain a relation between two sets of time domain samples separated by a period of strongly non-linear tones. **Roychowdhury** does not expressly teach defining a simulation time interval corresponding to the differential-algebraic equation. **Fabien** teaches defining a simulation time interval corresponding to the differential-algebraic equation (Page 2075, CL1, Abstract L9-13), because that allows numerical solution of boundary value differential algebraic equations using shooting methods (Page 2075, CL1, Abstract L10-13). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the method of **Roychowdhury** with the method of **Fabien** that included defining a

simulation time interval corresponding to the differential-algebraic equation. The artisan would have been motivated because that would allow numerical solution of boundary value differential algebraic equations using shooting methods.

Roychowdhury does not expressly teach dividing the simulation time interval into time intervals, wherein the time intervals have corresponding polynomials for each time interval, wherein each polynomial is a portion of an approximation to a desired solution of the differential-algebraic equation. **Fabien** teaches dividing the simulation time interval into time intervals, wherein the time intervals have corresponding polynomials for each time interval, wherein each polynomial is a portion of an approximation to a desired solution of the differential-algebraic equation (Page 2075, CL2, Para 2), because that results in solutions that are continuous at the nodes while satisfying the boundary conditions (Page 2075, CL2, Para 3). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the method of **Roychowdhury** with the method of **Fabien** that included dividing the simulation time interval into time intervals, wherein the time intervals have corresponding polynomials for each time interval, wherein each polynomial is a portion of an approximation to a desired solution of the differential-algebraic equation. The artisan would have been motivated because that would result in solutions that would be continuous at the nodes while satisfying the boundary conditions.

Per claim 7: **Roychowdhury** teaches that the circuit is a radio frequency (RF) circuit (CL2, L22-25; CL2, L66 to CL3, L4).

10.2 As per claim 14, **Roychowdhury** teaches the method of Claim 13. **Roychowdhury** does not expressly teach the method further comprising enforcing continuity of the solution at the boundary of neighboring intervals. **Fabien** teaches the method further comprising enforcing continuity of the solution at the boundary of neighboring intervals (Page 2075, CL1, Abstract L9-13), because that allows numerical solution of boundary value differential algebraic equations using shooting methods (Page 2075, CL1, Abstract L10-13). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the method of **Roychowdhury** with the method of **Fabien** that included the method further comprising enforcing continuity of the solution at the boundary of neighboring intervals. The artisan would have been motivated because that would allow numerical solution of boundary value differential algebraic equations using shooting methods.

10.3 As per Claim 28, it is rejected based on the same reasoning as Claim 14, supra. Claim 28 is computer readable medium claim reciting the same limitations as Claim 14, as taught throughout by **Roychowdhury** and **Fabien.**

11. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Roychowdhury** (U.S. Patent 5,5,995,733) in view of **Fabien** ("Indirect numerical solution of constrained optimal control problems with parameters", IEEE 1995), and further in view of **Srinivasan et al.** ("A multi-criteria approach to dynamic optimization", IEEE 1995).

11.1 As per claim 2, **Roychowdhury** and **Fabien** teach the method of Claim 1. **Roychowdhury** teaches that the simulation time interval has collocation points (CL10, L6-7; C19, L27-38); and interpolating polynomial (CL4, L45-47). **Roychowdhury** does not expressly teach that the interpolating polynomial has a degree of M. **Srinivasan et al.** teaches that the interpolating polynomial has a degree of M (Page 1768, CL1, Para 2, L31), because that would allow discretization by imposing the residual equation to be zero at M prefixed points in time known as the collocation points (Page 1768, CL1, Para 2, L15-17). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to combine the method of **Roychowdhury** with the method of **Srinivasan et al.** that included the interpolating polynomial having a degree of M. The artisan would have been motivated because that would allow discretization by imposing the residual equation to be zero at M prefixed points in time known as the collocation points.

11.2 As per claim 3, **Roychowdhury, Fabien** and **Srinivasan et al.** teach the method of Claim 2. **Roychowdhury** does not expressly teach that located at each collocation point t_j is a value of $u(t_j)$ respectively, to be interpolated with polynomials. **Srinivasan et al.** teaches that located at each collocation point t_j is a value of $u(t_j)$ respectively, to be interpolated with polynomials (Page 1768, CL1, Para 2, L4-5), because that would allow converting the problem with differential- algebraic equations to a non-linear programming problem with only algebraic constraints (Page 1768, CL1, Para 2, L1-3). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to combine the method of **Roychowdhury** with the method of **Srinivasan et al.** that included located at each collocation point t_j there being a value

of $u(t_j)$ respectively, to be interpolated with polynomials. The artisan would have been motivated because that would allow converting the problem with differential- algebraic equations to a non-linear programming problem with only algebraic constraints.

12. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Roychowdhury** (U.S. Patent 5,5,995,733) in view of **Fabien** ("Indirect numerical solution of constrained optimal control problems with parameters", IEEE 1995), and further in view of **Srinivasan et al.** ("A multi-criteria approach to dynamic optimization", IEEE 1995) and **Yang et al.** ("A Pseudospectral method for time-domain computation of electromagnetic scattering by bodies of revolution", IEEE 1999).

12.1 As per claim 4, **Roychowdhury, Fabien** and **Srinivasan et al.** teach the method of Claim 2. **Roychowdhury** does not expressly teach that the approximation to the desired solution of the differential-algebraic equations is $I_M\, u(t) = \Sigma_{k=0}{}^{M}\, u_k^{\sim}\, T_k\,(t)$, wherein M is the highest degree of the interpolating polynomial. **Yang et al.** teaches that the approximation to the desired solution of the differential-algebraic equations is $I_M\, u(t) = \Sigma_{k=0}{}^{M}\, u_k^{\sim}\, T_k\,(t)$, wherein M is the highest degree of the interpolating polynomial (Page 134, CL2, Para 6), because that would allow solution of the partial differential equations using Chebyshev collocation methods and Chebyshev interpolant of order M (Page 134, CL2, Para 6). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to combine the method of **Roychowdhury** with the method of **Yang et al.** that included the approximation to the desired solution of the differential-algebraic equations beings $I_M\, u(t) = \Sigma_{k=0}{}^{M}\, u_k^{\sim}\, T_k\,(t)$, wherein M is

the highest degree of the interpolating polynomial. The artisan would have been motivated because that would allow solution of the partial differential equations using Chebyshev collocation methods and Chebyshev interpolant of order M.

12.2 As per claim 5, **Roychowdhury, Fabien, Srinivasan et al.** and **Yang et al.** teach the method of Claim 4. **Roychowdhury** does not expressly teach that a derivative of the approximation is $(I_M u)'(t) = \Sigma_{k=0}^{M} u_k^{\sim'} T_k(t)$. **Yang et al.** teaches that a derivative of the approximation is $(I_M u)'(t) = \Sigma_{k=0}^{M} u_k^{\sim'} T_k(t)$ (Page 135, CL1, Para 1), because that would allow the partial differential equation to be satisfied at the collocation points (Page 135, CL1, Para 1). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to combine the method of **Roychowdhury** with the method of **Yang et al.** that included a derivative of the approximation being $(I_M u)'(t) = \Sigma_{k=0}^{M} u_k^{\sim'} T_k(t)$. The artisan would have been motivated because that would allow the partial differential equation to be satisfied at the collocation points.

13. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Roychowdhury** (U.S. Patent 5,5,995,733) in view of **Fabien** ("Indirect numerical solution of constrained optimal control problems with parameters", IEEE 1995), and further in view of **Srinivasan et al.** ("A multi-criteria approach to dynamic optimization", IEEE 1995), **Yang et al.** ("A Pseudospectral method for time-domain computation of electromagnetic scattering by bodies of revolution", IEEE 1999) and **Pasic** ("An algorithm for numerical solution of differential-algebraic equations", IEEE 1997).

13.1 As per claim 6, **Roychowdhury, Fabien, Srinivasan et al.** and **Yang et al.** teach the method of Claim 5. **Roychowdhury** does not expressly teach that each coefficient $u_k^{\sim'}$ is computed from $u_k^{\sim}$. **Pasic** teaches that each coefficient $u_k^{\sim'}$ is computed from $u_k^{\sim}$ (Page 4913, CL1, Para 1-4), because that would allow determining the unknown polynomial coefficients needed to find the solution to the differential-algebraic equation (Page 4913, CL1, Para 4). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to combine the method of **Roychowdhury** with the method of **Pasic** that included each coefficient $u_k^{\sim'}$ being computed from $u_k^{\sim}$. The artisan would have been motivated because that would allow determining the unknown polynomial coefficients needed to find the solution to the differential-algebraic equation.

14. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Roychowdhury** (U.S. Patent 5,5,995,733) in view of **Fabien** ("Indirect numerical solution of constrained optimal control problems with parameters", IEEE 1995), and further in view of **Yang et al.** ("A Pseudospectral method for time-domain computation of electromagnetic scattering by bodies of revolution", IEEE 1999).

14.1 As per claim 8, **Roychowdhury** and **Fabien** teach the method of Claim 1. **Roychowdhury** does not expressly teach that the step of applying a collocation method comprises applying Chebyshev collocation to discretize the set of differential-algebraic equation. **Yang et al.** teaches that the step of applying a collocation method comprises applying

Chebyshev collocation to discretize the set of differential-algebraic equation (Page 134, CL2, Para 5), because Chebyshev collocation methods provide superior approximation properties (Page 134, CL2, Para 5). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to combine the method of **Roychowdhury** with the method of **Yang et al.** that included the step of applying a collocation method comprising applying Chebyshev collocation to discretize the set of differential-algebraic equation. The artisan would have been motivated because Chebyshev collocation methods would provide superior approximation properties.

15. Claims 12 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Roychowdhury** (U.S. Patent 5,5,995,733) in view of **Yang et al.** ("A Pseudospectral method for time-domain computation of electromagnetic scattering by bodies of revolution", IEEE 1999).

15.1 As per claim 12, **Roychowdhury** teaches the method of Claim 1. **Roychowdhury** does not expressly teach that the step of applying a collocation method comprises applying Chebyshev collocation to each differential-algebraic equation to discretize the set of differential-algebraic equations. **Yang et al.** teaches that the step of applying a collocation method comprises applying Chebyshev collocation to each differential-algebraic equation to discretize the set of differential-algebraic equations (Page 134, CL2, Para 5), because Chebyshev collocation methods provide superior approximation properties (Page 134, CL2, Para 5). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to combine the method of **Roychowdhury** with the method of **Yang et al.** that included the step of applying a

collocation method comprises applying Chebyshev collocation to each differential-algebraic equation to discretize the set of differential-algebraic equations. The artisan would have been motivated because Chebyshev collocation methods would provide superior approximation properties.

15.2 As per Claim 26, it is rejected based on the same reasoning as Claim 12, supra. Claim 26 is computer readable medium claim reciting the same limitations as Claim 12, as taught throughout by **Roychowdhury** and **Yang et al.**

16. Claims 22 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Roychowdhury** (U.S. Patent 5,5,995,733) in view of **Phillips** (U.S. Patent 6,349,272).

16.1 As per claim 22, **Roychowdhury** teaches the method of Claim 21. **Roychowdhury** does not expressly teach that the local preconditioner comprises at least one of a capacitance matrix and a conductance matrix. **Phillips** teaches that the local preconditioner comprises at least one of a capacitance matrix and a conductance matrix (CL5, L42-51), because that allows linearizing the non-linear equations around collocation points, so small signal response could be obtained (CL5, L42-51). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to combine the method of **Roychowdhury** with the method of **Phillips** that included the local preconditioner comprising at least one of a capacitance matrix and a conductance matrix uations. The artisan would have been motivated because that would

allow linearizing the non-linear equations around collocation points, so small signal response could be obtained.

16.2 As per Claim 36, it is rejected based on the same reasoning as Claim 22, supra. Claim 36 is computer readable medium claim reciting the same limitations as Claim 22, as taught throughout by **Roychowdhury** and **Phillips.**

Allowable Subject Matter

17. Claims 19 and 33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 19 and 33 include the method of claim 18 or 32 including the limitation "the solution in a particular interval is smooth, and wherein the step of determining the order of accuracy desired in each interval comprises determining whether to increase the order of accuracy of the particular interval". The closest prior art in references by **Roychowdhury, Fabien, Srinivasan et al., Yang et al., Pasic** and **Phillips.** does not teach this limitation. Therefore, these claims are allowable.

18. Claims 20 and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 20 and 34 include the method of claim 18 or 32 including the limitation "the solution in a particular interval is not smooth, and wherein the step of determining the order of accuracy desired in each interval comprises splitting the particular interval into at least two subinterval". The closest prior art in references by **Roychowdhury, Fabien, Srinivasan et al., Yang et al., Pasic** and **Phillips.** does not teach this limitation. Therefore, these claims are allowable.

Conclusion

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kandasamy Thangavelu whose telephone number is 703-305-0043, till October 27, 2004 and 571-272-3717 after October 27, 2004. The examiner can normally be reached on Monday through Friday from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska, can be reached on (703) 305-9704, till October 27, 2004 and 571-272-3716 after October 27, 2004. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-9600.

K. Thangavelu
Art Unit 2123
September 4, 2004

JEAN R. HOMERE
PRIMARY EXAMINER